

THEREFORE I CLAIM

1. A hoisting assembly for supporting a differential of a vehicle having a frame, the vehicle having a differential that is adapted to be attached to an axle of the vehicle, the hoisting assembly comprising:
 - a central frame having first and second lateral ends and a central area
 - a hoisting device adapted to be mounted to the central area of the central frame, the hoisting device comprising an attachment member that is adapted to be mechanically attached to the differential of the vehicle;
 - whereas, the hoisting device is adapted to raise the attachment member vertically and the differential attached thereto and support the differential where the central frame is positioned substantially vertically above the differential and the hoisting assembly is adapted to be mounted to the frame of the vehicle.
2. The hoisting assembly as recited in claim 1 where the vehicle has a longitudinal axis indicating a longitudinal direction and the central frame is adapted to reposition in the longitudinal direction with respect to the vehicle.
3. The hoisting assembly as recited in claim 1 where the hoisting device is adapted to raise the differential where the differential is not directly under the hoisting device.
4. The hoisting assembly as recited in claim 3 where the differential is within 40° from a vertical axis from the location of the hoisting device when initially lifting the differential.
5. The hoisting assembly as recited in claim 1 where the hoisting device can reposition laterally with respect to the central frame.

6. The hoisting assembly as recited in claim 4 where the hoisting device can reposition laterally with respect to the central frame.
7. The hoisting assembly as recited in claim 1 where the attachment member is adapted to engage a recessed region of the differential.
- 5 8. The hoisting assembly as recited in claim 1 where the central frame has first and second longitudinally extending members that are located in the first and second lateral ends respectively.
9. The hoisting assembly as recited in claim 1 where the hoisting device comprises a cable that is adapted to extend and retract from a frame housing of the hoisting device.
- 10 10. The hoisting assembly as recited in claim 7 where the central frame has first and second longitudinally extending members that are located in the first and second lateral ends respectively.
11. The hoisting assembly as recited in claim 9 where the hoisting device comprises a crank member that is adapted to retract the cable and elevate the differential.
- 15 12. The hoisting assembly as recited in claim 11 where the central frame has first and second longitudinally extending members that are located in the first and second lateral ends respectively.
- 20 13. The hoisting assembly as recited in claim 1 where first and second containment brackets positioned at the first and second lateral ends extend substantially vertically downwardly around laterally outward surfaces of the frame member of the vehicle, the first and second containment brackets been adapted to maintain a position of the hoisting assembly in the lateral direction.
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14. The hoisting assembly as recited in claim 11 where first and second containment brackets positioned at the first and second lateral ends extend substantially vertically downwardly around laterally outward surfaces of the frame member of the vehicle, the first and second
5 containment brackets been adapted to maintain a position of the hoisting assembly in the lateral direction.
15. A method of removing a differential that is attached to a vehicle having a frame that comprises an upper support surface the method comprising:
- 10 retrieving a hoisting assembly comprising a central frame member and a hoisting device which comprises a hoisting cable and an attachment member attached to one end of the hoisting cable, supporting the hoisting assembly to the frame where the hoisting device is positioned substantially vertically above an engagement location of the differential,
- 15 attaching an attachment member that is operatively connected to the hoisting device to the engagement location of the differential,
- retracting the hoisting cable and applying tension thereto whereby supporting the differential and transferring the weight of the differential is transmitted through the central frame member and transferred to the frame of the vehicle.
- 20 16. The method as described in claim 15 where the hoisting assembly is repositioned in a longitudinal direction after the differential is elevated with respect to the frame of the vehicle.
17. The method as described in claim 15 where the hoisting assembly has a lower support surface that is positioned on the upper support surface of
25 the frame.
18. The method as described in claim 17 where the center of pull of the hoisting cable is positioned between a perimeter region of the lower support surface of the central frame.

19. The method as described in claim 16 where the differential is repositioned vertically downwardly by extracting the hoisting cable from the hoisting device and the differential is mechanically detached from the attachment member.
- 5 20. A method of attaching a differential to the axial of a vehicle having a longitudinal axis with a forward and rearward longitudinal region that comprises a frame having an upper support surface, the method comprising:
- 10 supporting a hoisting assembly comprising a central frame and a hoisting device attached to the frame of the vehicle;
- mechanically attaching an attachment member to an attachment location of the differential where as the attachment member is operatively connected to a hoisting cable which in turn is connected to the hoisting device and is adapted to forcefully retract therein,
- 15 retracting the hoisting cable whereby providing a vertical force to the differential and vertically supporting the same,
- positioning the differential to substantially align with a receiving portion of an axle of the vehicle whereby connection locations of the differential substantially aligned with connection locations of the axle,
- 20 fastening the differential to the axle of the vehicle at least two connection locations,
- removing the attachment member from the engagement location of the differential.
21. The method as described in claim 21 where the hoisting assembly is
- 25 initially placed in the longitudinally rearward location when initially attached to the differential.

22. The method as described in claim 21 where the hoisting assembly has a lower support surface that is positioned on the upper support surface of the frame.
- 5 23. The method as described in claim 22 where the hoisting assembly is repositioned in the longitudinally forward direction after supplying a sufficient vertical force to support the differential.
24. The method as described in claim 20 where the hoisting device vertically repositioned the differential so the connection locations of the differential and the axle substantially correspond in location.
- 10 25. The method as described in claim 20 where the hoisting device is repositioned laterally with respect to the central frame to substantially align the connection locations of the differential with the connection locations of the axle.
- 15 26. The method as described in claim 22 where the central frame has first and second lateral ends whereby first and second longitudinally extending members are positioned at the first and second lateral ends respectively and extend substantially the longitudinally direction whereby providing stability about the lateral axis of the hoisting assembly.
- 20 27. The method as described in claim 26 where the center of pull of the hoisting cable is positioned between a lower support surface of the central frame.
28. The method as described in claim 27 where the hoisting device vertically repositioned the differential so the connection locations of the differential and the axle substantially correspond in location.
- 25 29. The method as described in claim 27 where the hoisting device is repositioned laterally with respect to the central frame to substantially align

the connection locations of the differential with the connection locations of the axle.